

# Establishing New Management System of Fixed Assets in Colleges by Using Closed-loop Control

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## ABSTRACT

Only by setting up refined college fixed assets allocation standard to enhance its management, providing assessment in early stage and carefully choosing purchasing method during purchasing management, building open platform, controlling maintenance cost, strengthening KPI control during use management, scientifically checking fixed assets inventory, attaching labels or painting marks on fixed assets, making electric card for each item during physical management, identify principle, making process during disposal management, etc. We can achieve closed-loop control of college fixed assets<sup>1</sup>.

## PLANNING MANAGEMENT OF COLLEGE FIXED ASSETS

Lenin pointed out: "Any plan is a scale, a guide, a beacon, a road sign." In college fixed assets management, planning is not only the prerequisites of other managing functions, but also infiltrated into them. It is key procedure and has special position and important function. This is why Interim Measures for the Administration of State-Owned Assets of Institutions (Ministry of Finance, Order No. 36) requires: management of college fixed assets "should insist the principle of combining assets management and budget management,....., closely unify them". College fixed assets allocation standard must be premise of planning management. Otherwise there is no regulation to follow. Therefore, identifying allocation standard is prior of college fixed assets management, and then making procedure by batch yearly to process meaningful management of college fixed assets.

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## Identifying College Fixed Assets Allocation Standard

Although government documents such as Interim Measures for the Administration of State-Owned Assets of Institutions (Ministry of Finance, Order No. 36) points out “rationally allocates and effectively use state-owned assets” and requires all level financial departments and institutions “set up physical assets allocation standard of their own” and “optimize assets allocation” to “meet specified allocation standard”; Institution Financial Rules (Ministry of Finance, Order No. 68) also requires “enhance and specify assets allocation” and “should rationally allocated assets”. Interim Measures for the Administration of State-owned Assets of Colleges which directly under the Ministry of Education’s Management (Jiaocao (2012) No.6) requires “Allocation of college fixed assets should meets specified national allocation standard” as well. They are all point out college fixed assets allocation standard should be specified before processing fixed assets management. However, actually due to many reasons, financial department, education department or college itself doesn’t have this standard and there is no regulation to follow.

## SPECIFYING REFINED COLLEGE FIXED ASSETS ALLOCATION STANDARD

By initially setting up college fixed assets allocation standard data base, investigating and analyzing, trial testing allocation standard, forming a refined college fixed assets allocation standard gradually.

(1). Allocation standard of daily office use. Firstly, allocation content. Office equipments include copy/printing machine, fax, all-in-one machine, camera, video camera, TV, projector, computer; assistance equipment include furniture, table, chair, multimedia display system, air conditioner, etc. Secondly, allocation standard. For office equipment, every administrator has one desktop computer, researching center have 1-3pcs of desktop computer based on its employee quantity. Laptop computer should less than 15% of employee quantity in establishment. Copy machine (not including fast printing machine) should less than 3%. Camera should less than 8%. Video camera should less than 1%. TV should less than 15%. Projector should less than 3%. For assistance equipment, furniture such as table, chair, document cabinet is allocated based on cadre position. Air conditioner is based on size of rooms. Size of rooms is based on national standard of cadre. Thirdly, minimum life cycle. Desktop computer, laptop computer and copy machine is 6 years. Scanner is 8 years, Laser printing machine is 7 years. Dot matrix printer is 8 year. Fax machine is 10 years. Projector is 8 years. TV and air conditioner is 10 year. Furniture is for long-term use (if damage and not able to fix, can be scrapped) [1-2].

(2). Teaching equipment allocation standard. It should not only meet average standard of talent training level, but also thoroughly consider basic condition of

running a college. For example, to confirm teaching equipment allocation standard by considering how many equipments needed for each subject and major.

(3). Researching equipment allocation standard. Theoretically, there is no need to allocate more equipments if current teaching equipment can meet researching requirement. Those researching equipment for special purpose and can be used in future teaching process shall be considered into allocation standard. Otherwise, they can be allocated by leasing or outsourcing considering using efficiency.

## **Planning of College Fixed Assets**

### **CONTENT OF COLLEGE FIXED ASSETS PLANNING**

Including: item No., series name (code, name), quantity (pc/lot) (standard allocation, actual from end of last year, planning for this year), allocation basis, standard of unit price, latest using time, etc.

### **PROCEDURE OF COLLEGE FIXED ASSETS PLANNING**

Each department provides fixed assets plan for next year by December. Fixed assets management department evaluates their plans according to current assets' situation, new replaces old principle, urgency of demand and whether assets can be shared with other departments. And then make fixed assets allocation plan for those assets need updated or purchased and form initial plan under direct manager's approval and financial department assistance. Plans will be carried out after final approval from college committee. In the meantime, we should consider combine annual allocation plan with three-year plan to gradually fulfill plan in a rolling method.

## **MANAGEMENT OF PURCHASING COLLEGE FIXED ASSETS**

### **Thoroughly Assess in Early Stage**

#### **INSIST "FIVE" ASSESSMENT PRINCIPLE**

Scientific principle. To reduce projects which can be shared and supply missing projects in order to reduce short comings after completing project; to consider both main equipment and accessory purchase; to fully consider room size, noise (floor level), cleanness, humidity and other needs with following costs, employee protection, etc; to meet normal needs together with KPI requirements (at least after a certain period) through experts' assessment.

Advanced principle. To ensure equipment is with advanced technology which will not be eliminated so soon.

Thorough principle. This means contents of assessment is thorough. One is description of equipment and the other is reason of purchasing these equipment. For example, reason and necessity of purchase, expected economic and social benefit, comparison of picking a model, mounting and using conditions, management plan of running the equipment, etc.

Economic principle. To choose equipment with better warranty period, technical training, free accessories by comparing different suppliers to lower purchasing cost.

Fair principle. Judges should be professional and assessment standard should be reasonable such as setting reasonable index, indicating scientifically, having full supporting material, identifying scoring standard[3], etc.

## SET UP “FIVE LEVEL” ASSESSMENT MECHANISM

First level is equipment using department who provides equipment needs report after internal assessment; second level is contacting department such as teaching and researching department who make initial evaluation and suggestion to lab construction and equipment purchase plan; third level is assets equipment department who make re-evaluation based on second level department's initial suggestion; forth level is section principal arranging expert argumentation; fifth level is reporting party committee, party and government joint committee or principal's office according to project (equipment) value.

## Carefully Choose Purchasing Method

College fixed assets purchasing methods include: open bidding, inviting bidding, competitive negotiation, single resource purchase, enquiry, other methods. We must carefully choose purchasing method as different methods suit different area. Among them, open bidding is the most important and should carried out following Government Procurement Law, Government Procurement Law Implementation Regulation and “Government integrated purchasing catalogue”, “Department integrated purchasing catalogue”, “Decentralized purchase limit regulation”, “Open bidding amount limit regulation” in Provincial Government Integrated Purchasing catalogue and Amount Limit Regulation. Open bidding should public regulation, procedure, content, scoring standard, evaluating bidding, confirming bidding, result[4], etc and is not allowed to divide fixed assets into small purchase to avoid open bidding. Secondly is inviting bidding. This is suitable for those projects with complex technology, have special requirements or limited by natural environment. There are a few potential bidder can be chosen and limited supplier can provide. Or open bidding occupies too much portion of government purchasing total value. Inviting bidding should insist anti-bribe, confidentiality, avoiding relationship, stimulating competition, performing according to law, etc. Thirdly is competitive negotiation which should comply with order No. 30 in Government Procurement Law and Regulation No.43 in Order No.18 of Financial Ministry and also use scientific procedure and specified judging standard. Forth is single resource

purchase. Procedure is as following: full reason and regulation and public in certain media→making purchase documents→sending out negotiation notification→organizing negotiation→announcing transaction, sending out transaction notification. Fifth is enquiry. Procedure is as following: forming enquiry group→confirming supplier list→enquiring quotation→confirm supplier→public result→sending out notification. Last is on-line purchasing. Purchasing projects which are in governments on-line purchase catalogue.

## **USAGE MANAGEMENT OF COLLEGE FIXED ASSETS**

### **Build Open and Sharing Platform**

Building open and sharing platform according to “sharing among departments, managing by one department” principle.

#### **BUILD OPEN AND SHARING PLATFORM INSIDE COLLEGE**

(1). Vertical management platform. Breaking the border of subject, major, lab, scientific project who owns valuable and large equipment alone. Leading by fixed assets management department, under college regulation, Building college, section, lab sharing platform under purpose of talent training, scientific research and social service.

(2). Fully open. Equipment purchased by national funds should fully open 24 hours by 7 days[5]. If any equipment management department cannot meet above requirement due to some special reason, department manager needs to provide minimum open time and get approval before implementation and gradually achieve above mentioned requirement to raise equipment usage efficiency.

#### **BUILD OPEN AND SHARING PLATFORM OUTSIDE COLLEGE**

One is to build sharing platform among educational system. Basic teaching and researching facility and large equipment whose original value is over RMB500,000 need to be included and evaluated. For basic teaching and researching facility, we evaluate its running condition, sharing, running result, management, etc. For large equipment, we evaluate its sharing, management, service result, etc. The other is to build sharing platform among colleges. This means basic teaching and researching facility and large equipment whose original value is over RMB500,000 need to be included among colleges in same city.

### **Reasonably Control Maintenance Costs**

As some common problems appear in equipment maintenance cost control in college such as not paying attention, no strict regulation, different charging standard,

difficulty to control cost, not clear responsibility, lack of regulation how to use funds[6], etc, college needs to establish and improve management policy to construct a “integrated leading, confirming budget, confirming responsible department, approval limit value, dealing with over-budget, back to zero by the end of each year, supervising by KPI” mechanism, and then control maintenance costs reasonably (overall considering to make budget by series, identifying small, medium, big maintenance situation, using intuitive maintenance method, alternative maintenance method, comparison maintenance method and analysis maintenance method[7]). Also to control equipment cost by optimizing whole group(quantity allocation, quality improvement such as specify workers and managers responsibility, improve technical skills).

### **Fully Enhance KPI**

Design performance evaluation system by following objectivity, quality and quantity evaluation, comparability, systematic, hierarchy and focus, reasonability, operational, independency, scientific[8], etc. principle. Detailed as below:

### **QUALITATIVE ASSESSMENT INDEX**

First is management department. For example, if fixed assets managing department is built centrally or not, if section manager and department manager are familiar with regulation and technical knowledge, if responsibility is clear to upper, middle, lower department and user. Second is management policy. To check if set up full policy through allocation standard→plan→bidding→purchase→audit→assembling→usage→checking→inspection→adjustment→compensation→maintenance→disposal[9] procedure. Third is execution of policy. If strictly execute above policy. Forth is information technology. If establish and use fixed assets management. If run dynamic management and update data in time regarding college fixed assets’ situation, allocation, occupying, usage, disposal, etc. If have qualified bar code management. If information system is functional. Sixth is managing procedure. For example, if investment and procedure comply with regulation. Seventh is managing efficiency. Mainly to check if documents and items are consistent, documents are consistent[11].

### **QUANTITATIVE ASSESSMENT INDEX**

(1). Operational index. First is college fixed assets rate which means percentage of fixed assets in college total assets value. Second is college fixed assets retention rate which means percentage of fixed assets value which comply with financial documents in college total fixed assets value. Third is college fixed assets in good rate which means percentage of fixed assets under good condition in college total fixed assets value. Forth is college fixed assets utilization rate which means

percentage of fixed assets in use original value in college fixed assets total value[8, 11-12]. Fifth is college fixed assets sharing rate which means percentage of fixed assets already shared original value in college fixed assets total value[8, 11]. Sixth is college fixed assets replacing rate[8] which means percentage of new fixed assets in initial college fixed assets total value. Seventh is college fixed assets increasing rate which means percentage of net increased fixed assets value (increased fixed assets' total value in this period– decreased fixed assets' total value in this period) in initial college fixed assets total value.

(2). Performance evaluation index. First is college fixed assets research rate (2 scores). This mainly refers to percentage of number of awards and projects at the department level or above, invention patents, authoritative publication, three major searches, core publication, etc. in college fixed assets. Second is talent training rate which means number of talent trainee in total participants. Third is national examination pass rate which means number of students who pass computer, English and any other mandatory test in total amount of students. Forth is functional utilization rate which means equipment in use quantity cannot lower than budget quantity. Fifth is equipment utilization rate which means percentage of in use hours in approved in use hours. Sixth is graduation rate and employment rate through one interview[13].

## **PHYSICAL MANAGEMENT OF COLLEGE FIXED ASSETS**

### **Scientific Fixed Assets Inventory Check**

As some common problems appear in fixed assets inventory check which affect enhancing managing level such as weak consciousness on this job, not paying attention, too large managing system, lack of specific implementation basis, checking procedure not complying with long-term purpose, idle and loss, low utilization, incorrect checking method, not so qualified assets managing people, it is required to run fixed assets inventory check scientifically.

We should set up responsibility policy of assets managing people in all levels; set up closed-loop management; set up checking in certain period and checking on focused items; implement the liability reporting system of assets losses[14]; enhance organizing managing team policy, etc.

Firstly, make preparation which means investigate in advance and set up checking plan. Secondly, use accounting book to make checklist. Thirdly, re-check at sight. Detailed procedure is: preparation→checking documents→assets not in documents→inspecting according to checklist→update checklist→consolidate check result[15].

We should set up found and not found module, define reason for items not found including not established in documents, not identified and not self-checked[16]. To set normal, abnormal, incorrect unit, incorrect location, incorrect user and owner, not see physical item, not list in documents, not update in documents, duplicating,

idle, scraping, etc status in checking result. In them mean time, QR code can be used to improve inventory checking efficiency.

### **Enhance Physical Item Management of Fixed Assets**

Firstly, we need to attached label or paint marks on each item. Secondly, we need to make an electric card for each item. Every card should have a No. Card heading includes: issue department, date, card No. Left of the card includes; Fixed assets name, spec, increase or decrease method, invoice No., accounting document No., purchase (transfer) date, production date, manufacturer contact information, supplier contact information, year of use, depreciation method, monthly depreciation. Right of the card includes: fixed assets No., code and series, date start to use, original value, total depreciation, net value, user department, storage location, purchaser contact information, user contact information, administrator contact information, use status. Bottom of the card includes: fixed assets managing department supervisor, who make audit, who fill up this card[17].

## **DISPOSAL MANAGEMENT OF COLLEGE FIXED ASSETS**

### **Mandatory Disposal Principle**

First is prior adjustment principle. If fixed assets management department evaluates the equipment is still qualified when original user apply for disposal, original user should continue to use the equipment or transfer it to other departments. Qualified fixed assets cannot be scrapped in advance. Second is assessment principle. User should attach initial evaluation in disposal report before submitting this report to fixed assets management department. The later department need to arrange experts' assessment and then submit disposal report to college officially. Third is loss compensation principle. Forth is disposal according to rights principle. For those fixed assets which college doesn't have right to disposal, college needs educational and financial ministry's approval and use their authorized disposal enterprise. For those fixed assets which college has right to disposal, college disposes according to permission. Fifth is property agency principle[18]. This means college needs to sell, transfer, replace fixed assets through agency, not by self-evaluation or assigning not qualified enterprise to evaluation assets.

### **Disposal Procedure Should Be Reasonable**

Reasonable disposal procedure can ensure effective implement of disposal management order from national and provincial department. The procedure is: user provide application of disposal→assets management department of this user audit→user arrange expert assesment→manager of the user check→public



internally→fixed assets managing department evaluate→they arrange expert assesment→section manager approval→principal office approval[18]. Two situation thereafter, one is college ask for supervising department's approval for those special fixed assets college has no right to disposal→authorize enterprise to dispose→receive disposal income→cancel fixed assets on accounting documents. The other is college arrange bidding for those assets they have right to dispose→receive disposal income→cancel fixed assets on accounting documents. If beyond limit access: approval from supervising department→bidding→receive disposal income→cancel fixed assets on accounting documents.

As a conclusion, only by paying attention to the root of standard and fixing management plan, forming a closed-loop managing mechanism through enhancing purchase management, usage management, physical management and scientific disposal management, we can improve college fixed assets managing level.

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